



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,096	09/12/2003	Brian D. Petry	ASTU-006/01US 017622-2017	6582
23419 7590 08/21/2008 COOLEY GODWARD KRONISH LLP ATTN: Patent Group Suite 1100 777 - 6th Street, NW Washington, DC 20001				
EXAMINER				
WANG, LIANG CHE A				
ART UNIT		PAPER NUMBER		
2153				
MAIL DATE		DELIVERY MODE		
08/21/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/661,096

Applicant(s)

PETRY ET AL.

Examiner

Liangche A. Wang

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-26 are presented for examination.
2. Claims 1, 11, 18 and 24 are amended.
3. This action is in response to amendment filed on 5/5/08.

The New Grounds of Rejection

4. Applicant's amendment and argument with respect to claims 1-26, filed on 5/5/08 have been fully considered but they are deemed to be moot in views of the new grounds of rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 5, 8-12, 14-19, 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orman et al., US Patent Number 7,076,555, hereinafter Orman, in views of Soles et al., US Patent Number 7,143,131, hereinafter Soles.
7. Referring to claim 1, Orman teaches a method of facilitating failover of a stateful protocol connection from a proxy element (failed first server) to a standby proxy (second server)(Col 1 lines 8-13; Col 6 lines 63-66), the method comprising:

- a. receiving (Col 5 lines 28-35, client uses proxy server to retrieve data from web server, the client request is received at the proxy server), at the proxy element (failed first server, proxy server 302, Figure 3), data (client request corresponds to “data”) sent by a first external entity (client 120), in accordance with a first stateful protocol connection (Col 9 lines 8-11, original TCP connection established between the first server and the client corresponds to “a first stateful protocol connection”);
- b. transferring state information relating to the first stateful protocol connection from the proxy element (the failed first server) to a standby proxy (second server) (Col 9 lines 52-55, 63-66, shared state information originally owned by the failed first server is transferred to the second server).

Orman does not explicitly teach, withholding acknowledgement of receipt of the data at the proxy element until a predefined operation involving the data has been performed, said predefined operation being performed subsequent to the receipt of the data; and sending, from proxy element, the acknowledgement of receipt to the first external entity subsequent to performance of the predefined operation involving the data.

However, Soles teaches, withholding acknowledgement of receipt of the data at the proxy element until a predefined operation involving the data has been performed (Col 12 lines 41-48, figure 1, XTCP 106 in server 102 withholds acknowledgement of received packets, and “throttling” corresponds to the “predefined operation”), said predefined operation being performed subsequent to the receipt of the data (Col 12 lines 41-48) and being other than determining the data has been satisfactorily received(the

withholding to is to achieve "trotting"); and sending, from proxy element (server 102), the acknowledgement of receipt to the first external entity subsequent to performance of the predefined operation involving the data (Col 12 lines 41-48, figure 1, XTCP 106 in server 102 withholds acknowledgement of received packets, and the withholding will be eventually released).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate the withholding of acknowledgement Soles into Orman because both Orman and Soles both teaches a data communication in a network.

A person with ordinary skill in the art would have been motivated to make the modification to Orman because having such technique from Soles would allow the Orman to enhance the operating efficiency of network devices and enables the network devices to support open, persistent connections with large number of clients as taught by Soles (Col 2 lines 27-34).

8. Referring to claim 2, Orman as modified teaches the method of claim 1 wherein the predefined operation comprises committing the data to an application executing upon the proxy element and receiving a send acknowledgment command from the application (Soles, Col 12 lines 41-48).
9. Referring to claim 5, Orman teaches the method of claim 1 further including failing over the first stateful protocol connection to the standby proxy (Col 8 lines 63-66, connections between the client and the first server is failing over to the second server).
10. Referring to claim 8, Orman teaches the method of claim 1 wherein the transferring of the state information is performed in accordance with an additional stateful protocol

connection (figure 3, shared state information is stored on shared connection structure 340, which is transferred to cache via connection between the proxy server and the shared connection structure 340).

11. Referring to claim 9, Orman teaches the method of claim 5 further including beginning servicing, at the standby proxy, the first stateful protocol connection from a last successful point of synchronization between the proxy element and the standby proxy (Col 10 lines 22-29, Col 3 lines 32-45).
12. Referring to claim 10, Orman teaches the method of claim 1 further including detecting, at the standby proxy, failure of the first stateful protocol connection (Col 9 lines 11-13, failure of first server is detected by the second server) and initiating failover of the first stateful protocol connection from the proxy element to the standby proxy (Col 9 lines 52-66).
13. Referring to claim 11, Orman teaches a method of facilitating failover of a stateful protocol connection (Col 1 lines 8-13; Col 6 lines 63-66), the method comprising:
 - a. receiving (Col 5 lines 28-35, client uses proxy server to retrieve data from web server, the client request is received at the proxy server) data sent by a first external entity (client 120), in accordance with a the stateful protocol connection (Col 9 lines 8-11, original TCP connection established between the first server and the client corresponds to "the stateful protocol connection");
 - b. transferring state information relating to the stateful protocol connection to a standby system (second server) (Col 9 lines 52-55, 63-66, shared state

information originally owned by the failed first server is transferred to the second server).

Orman does not explicitly teach, withholding acknowledgement of receipt of the data at the proxy element until a predefined operation involving the data has been performed, said predefined operation being performed subsequent to the receipt of the data; and sending, from proxy element, the acknowledgement of receipt to the first external entity subsequent to performance of the predefined operation involving the data.

However, Soles teaches, withholding acknowledgement of receipt of the data at the proxy element until a predefined operation involving the data has been performed (Col 12 lines 41-48, figure 1, XTCP 106 in server 102 withholds acknowledgement of received packets, and “throttling” corresponds to the “predefined operation”), said predefined operation being performed subsequent to the receipt of the data (Col 12 lines 41-48) and being other than determining the data has been satisfactorily received(the withholding is to achieve “trotting”); and sending, from proxy element (server 102), the acknowledgement of receipt to the first external entity subsequent to performance of the predefined operation involving the data (Col 12 lines 41-48, figure 1, XTCP 106 in server 102 withholds acknowledgement of received packets, and the withholding will be eventually released).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate the withholding of acknowledgement Soles into Orman because both Orman and Soles both teaches a data communication in a network.

A person with ordinary skill in the art would have been motivated to make the modification to Orman because having such technique from Soles would allow the Orman to enhance the operating efficiency of network devices and enables the network devices to support open, persistent connections with large number of clients as taught by Soles (Col 2 lines 27-34).

14. Referring to claim 12, Orman as modified teaches the method of claim 11 wherein the predefined operation comprises committing the data to an application executing upon the proxy element and receiving a send acknowledgment command from the application (Soles, Col 12 lines 41-48).
15. Referring to claim 14, Orman teaches the method of claim 11 further including failing over the first stateful protocol connection to the standby system (Col 8 lines 63-66, connections between the client and the first server is failing over to the second server).
16. Referring to claim 15, Orman teaches the method of claim 11 wherein the transferring of the state information is performed in accordance with an additional stateful protocol connection (figure 3, shared state information is stored on shared connection structure 340, which is transferred to cache via connection between the proxy server and the shared connection structure 340).
17. Referring to claim 16, Orman teaches the method of claim 14 further including beginning servicing, at the standby system, the stateful protocol connection from a last successful point of synchronization between the proxy element and the standby system (Col 10 lines 22-29, Col 3 lines 32-45).

18. Referring to claim 17, Orman teaches the method of claim 11 further including detecting, at the standby system, failure of the stateful protocol connection (Col 9 lines 11-13, failure of first server is detected by the second server) and initiating failover of the stateful protocol connection from the proxy element to the standby system (Col 9 lines 52-66).
19. Referring to claim 18, Orman teaches a stateful protocol processing apparatus comprising:

- a. a proxy element (failed first server) having a first protocol core (interface for connection with a client) and a second protocol core (interface for connection with a web server)(Col 5 lines 28-37) the first protocol core supporting a first stateful protocol connection (Col 9 lines 8-11, original TCP connection established between the first server and the client corresponds to “a first stateful protocol connection”) over which data is received from a first external entity (client 120) (Col 5 lines 28-35, client uses proxy server to retrieve data from web server, the client request is received at the proxy server);
- b. a standby element (second server) to which state information relating to the first stateful protocol connection is transferred from the proxy element (Col 9 lines 52-55, 63-66, shared state information originally owned by the failed first server is transferred to the second server).

Orman does not explicitly teach, withholding acknowledgement of receipt of the data at the proxy element until a predefined operation involving the data has been performed, said predefined operation being performed subsequent to the receipt of the

data; and sending, from proxy element, the acknowledgement of receipt to the first external entity subsequent to performance of the predefined operation involving the data.

However, Soles teaches, withholding acknowledgement of receipt of the data at the proxy element until a predefined operation involving the data has been performed (Col 12 lines 41-48, figure 1, XTCP 106 in server 102 withholds acknowledgement of received packets, and “throttling” corresponds to the “predefined operation”), said predefined operation being performed subsequent to the receipt of the data (Col 12 lines 41-48) and being other than determining the data has been satisfactorily received (the withholding is to achieve “trotting”); and sending, from proxy element (server 102), the acknowledgement of receipt to the first external entity subsequent to performance of the predefined operation involving the data (Col 12 lines 41-48, figure 1, XTCP 106 in server 102 withholds acknowledgement of received packets, and the withholding will be eventually released).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate the withholding of acknowledgement Soles into Orman because both Orman and Soles both teaches a data communication in a network.

A person with ordinary skill in the art would have been motivated to make the modification to Orman because having such technique from Soles would allow the Orman to enhance the operating efficiency of network devices and enables the network devices to support open, persistent connections with large number of clients as taught by Soles (Col 2 lines 27-34).

20. Referring to claim 19, Orman as modified teaches the apparatus of claim 18 wherein the predefined operation comprises committing the data to an application executing upon the proxy element (Rostowfske, Col 7 lines 26-32) and receiving a send acknowledgment command from the application (Rostowfske, Col 6 lines 26-32), and wherein the proxy element is further configured to send the acknowledgement of receipt to the first external entity subsequent to performance of the predefined operation involving the data (Col 7 lines 26-32, the primary server will return an acknowledgement back to the client (the first external entity) reflecting the satisfactory receipt of the data frame).
21. Referring to claim 21, Orman teaches the apparatus of claim 18 further including a switch (switch 310, figure 3) disposed to failover the first stateful protocol connection from the proxy element to the standby element (Col 8 lines 63-66, connections between the client and the first server is failing over to the second server).
22. Referring to claim 22, Orman teaches the apparatus of claim 21 further including a failure detection unit configured to detect failure of the first stateful protocol connection (Col 9 lines 11-13, failure of first server is detected by the second server) and to command the switch to initiate said failover (Col 9 lines 52-66), the standby proxy beginning servicing, the first stateful protocol connection from a last successful point of synchronization between the proxy element and the standby proxy (Col 10 lines 22-29, Col 3 lines 32-45).
23. Referring to claim 23, Orman as modified further teaches the apparatus of claim 18, wherein the standby element includes memory in which is stored the state information relating to the first stateful protocol connection (Col 9 lines 53-55, 63-65, and figure 3, item 304).

24. Referring to claims 24-26 claims 24-26 encompass the same scope of the invention as that of the claims 1-2. Therefore, claims 24-26 are rejected for the same reason as the claims 1-2. (Col 7 lines 26-32, the primary server will return an acknowledgement back to the client (the first external entity) reflecting the satisfactory receipt of the data frame, acknowledgement is a confirmation that the data has been received at the host entity).
25. Claims 3, 4, 6, 7, 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orman, in views of Soles, and in further views of Serex et al., US Patent Number 6,532,079, hereinafter Serex.
26. Referring to claim 3, Orman as modified teaches the method of claim 1 wherein the predefined operation comprises: sending, from the proxy element (first server), the data to a second external entity (web server corresponds to “a second external entity”) (Col 5 lines 28-31, Col 6 lines 20-23, Col 1 lines 31-35, proxy server handles user requests and retrieve data from the web server).

Orman does not explicitly teach, receiving, at the proxy element, a second acknowledgment that the data has been received at the second external entity.

However, Serex teaches, once the data transfer is completed, the image processor acknowledges that the transfer was carried out properly, which enables the information server to delete the copy of the information stored (Col 3 lines 57-60).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate the copy deletion on information server based on transfer acknowledgement of Serex, into Orman because Orman teaches a proxy device that handles user request to retrieve information from a server (Col 5 lines 28-31), and

Serex suggests to delete the redundant information upon acknowledgement at proxy device (Col 3 lines 57-60)

A person with ordinary skill in the art would have been motivated to make the modification to Orman because having such acknowledgement would allow proxy device of Orman to be informed whether an information is transfer properly and prevent unaware data loses and saving memory spaces upon deleting redundant information on information server as taught by Serex (Col 3 lines 57-60).

27. Referring to claim 4, Orman as modified teaches the method of claim 3 wherein the sending of the data to the second external entity (Col 5 lines 28-35, client uses proxy server to retrieve data from web server, client request is sent to the web server from the proxy server) is performed in accordance with a second stateful protocol connection (figure 1, connection between the proxy server and the web server, corresponds to “a second stateful protocol connection”), the method further including transferring state information relating to the second stateful protocol connection to the standby proxy (Col 9 lines 52-55, 63-66, shared state information originally owned by the failed first server is transferred to the second server).
28. Referring to claim 6, Orman as modified teaches the method of claim 4 further including failing over the second stateful protocol connection to the standby proxy (Col 8 lines 63-66, connections between the web server and the first server is failing over to the second server).
29. Referring to claim 7, Orman as modified teaches the method of claim 1, and Orman does not explicitly teach transmitting, from the first external entity, the data to the proxy

element and retaining a copy of the data; and deleting the copy of the data upon receipt at the first external entity of the acknowledgment.

However, Serex teaches once the data transfer is completed, the image processor acknowledges that the transfer was carried out properly, which enables the information server to delete the copy of the information stored (Col 3 lines 57-60).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate the copy deletion on a sender device based on transfer acknowledgement of Serex, into Orman because Orman teaches a proxy device that handles user request (Col 5 lines 28-31, Col 6 lines 20-22), and Serex suggests to delete the redundant information upon acknowledgement at proxy device (Col 3 lines 57-60)

A person with ordinary skill in the art would have been motivated to make the modification to Orman because having such acknowledgement would allow proxy device of Orman to be informed whether an information is transfer properly and prevent unaware data loses and saving memory spaces upon deleting redundant information on the sender device as taught by Serex (Col 3 lines 57-60).

30. Referring to claim 13, Orman as modified teaches the method of claim 11 wherein the predefined operation comprises: sending the data to a host entity (web server corresponds to "host entity") (Col 5 lines 28-31, Col 6 lines 20-23, Col 1 lines 31-35, proxy server handles user requests and retrieve data from the web server).

Orman does not explicitly teach, receiving confirmation that the data has been received at the host entity.

However, Serex teaches once the data transfer is completed, the image processor acknowledges that the transfer was carried out properly, which enables the information server to delete the copy of the information stored (Col 3 lines 57-60).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate the copy deletion on information server based on transfer acknowledgement of Serex, into Orman because Orman teaches a proxy device that handles user request to retrieve information from a server (Col 5 lines 28-31), and Serex suggests to delete the redundant information upon acknowledgement at proxy device (Col 3 lines 57-60)

A person with ordinary skill in the art would have been motivated to make the modification to Orman because having such acknowledgement would allow proxy device of Orman to be informed whether an information is transfer properly and prevent unaware data loses and saving memory spaces upon deleting redundant information on information server as taught by Serex (Col 3 lines 57-60).

31. Referring to claim 20, Orman as modified teaches the apparatus of claim 18, wherein the second protocol core is configured to support a second stateful protocol connection to a second external entity (web server) over which is transmitted the data (Col 9 lines 8-11, Col 5 lines Col 5 lines 28-35, original TCP connection established between the first server and the web server corresponds to “a second stateful protocol connection”) and wherein the predefined operation comprises receiving, at the proxy element, a second acknowledgement that the data has been received at the second external entity.

Orman does not explicitly teach, receiving, at the proxy element, a second acknowledgment that the data has been received at the second external entity.

However, Serex teaches once the data transfer is completed, the image processor acknowledges that the transfer was carried out properly, which enables the information server to delete the copy of the information stored (Col 3 lines 57-60).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate the copy deletion on information server based on transfer acknowledgement of Serex, into Orman because Orman teaches a proxy device that handles user request to retrieve information from a server (Col 5 lines 28-31), and Serex suggests to delete the redundant information upon acknowledgement at proxy device (Col 3 lines 57-60)

A person with ordinary skill in the art would have been motivated to make the modification to Orman because having such acknowledgement would allow proxy device of Orman to be informed whether an information is transfer properly and prevent unaware data loses and saving memory spaces upon deleting redundant information on information server as taught by Serex (Col 3 lines 57-60).

Conclusion

32. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

33. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liang-che Alex Wang whose telephone number is (571)272-3992. The examiner can normally be reached on Monday thru Friday, 8:30 am to 5:00 pm.
35. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton B Burgess can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
36. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2153

Liang-che Alex Wang

August 18, 2008

/Liangche A. Wang/

Primary Examiner, Art Unit 2153